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Reprint

EXTRAPOLATION :
A SCIENCE - FICTION
NEWSLETTER

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Wooster, Ohio

The Newsletter of the Conference on Science-Fiction of the MIA is published twice a year in the Department of English at The College of Wooster. All correspondence should be addressed to the editor.

From the Launching Pad

This year's Conference will be at 8:45 a.m. Saturday morning, December 28, in Room 8 in the Palmer House. Scott C. Osborn is discussion leader; the topic is "Science Fiction versus Science in Fiction." The topic grew at least in part out of John Hamilton's article on science fiction featuring doctors and medical science which was published a year ago in Extrapolation.

Scott tells me that letters asking that the Conference be given permanent status as a discussion group should be in his hands before the meeting of the MLA Executive Council. . So there is still time. Write to Mr. John Fisher, Executive Secretary, MLA, but send the letters to Scott either at Box 69, State College, Mississippi, or at the Palmer House. He must present all the letters together.

Milo Kaufman's article in this issue resulted from the at times heated discussion at the Conference last year.

Aldous Huxley
1894-1963

And so has died another of the
generation that had such people in it.

T. D. C.

THE CLARKSON COLLECTION OF SCIENCE FICTION AT HARVARD

Mark R. Hillegas

The genesis of the Clarkson Collection was described in the Harvard Library Bulletin in 1955:

The growing recognition of science fiction, in its more developed aspects, as a significant medium both of imaginative literature and of social criticism has led to the establishment at Harvard of a special collection in the field. The nucleus has been provided by the private collection of Richard W. Clarkson, of Baltimore, who died in December 1954, in his junior year at Harvard; this collection, relating chiefly to the 'modern' period (since 1930) of the subject, has been presented to Harvard by Richard's father, Paul S. Clarkson, LL.B. '28. It joins the distinguished collection of Utopian literature given to Harvard in 1932 by the Reverend Francis G. Peabody, Plummer Professor of Christian Morals. In addition, collections of Lauriston Ward, '03, and G. W. Cottrell, Jr., '26, largely supplementing the Clarkson gift, are destined to come to Harvard in due course.

Since this announcement, the Ward and at least part of the Cottrell collection have come to Harvard as well as other gifts and acquisitions. The collection is now quite large (at least 3000 catalogue entries) and growing larger: acquisitions are continually being made both of periodicals and of hard-cover and paperback fiction to realize complete holdings.

As to the nature of the collection, it is largely, though not exclusively, what could be called science fiction. The intention, according to the Harvard Library Bulletin, has been to build a "comprehensive assemblage" not only of science fiction but of "related types of imaginative literature."

The collection is catalogued in eleven divisions, and a description by divisions will give some idea of the range of the entire collection. (This is a description as of January 1, 1963, and does not include acquisitions catalogued since that date.)

I. FICTION

Fiction is by far the largest division, with more than 2000 card entries. It consists primarily of longer works -- novels -- though occasionally there are collections of the short stories or short novels by one author. With a few exceptions, such as very famous works like Zamyatin's We, Čapek's War with the Newts, works by Jules Verne and by the Soviet science-fiction writer, Ivan Efremov, every book in this division is British or American. (There is a separate division for foreign fiction, which is described below.)

Catalogue entries in this first division are by author only, not by title; the books are both paperback and hardcover.

Perhaps the most interesting and unusual category in this division is the fiction by "professional" science-fiction writers — writers whose names would probably be familiar to regular readers of the pulp science-fiction magazines, either now or at various times since Amazing started publication in 1926. The richness of the holdings of this type (chiefly paperbacks) is evident from the following partial listing of writers represented more or less completely (Deficiencies exist, of course, such as no copy of Walter M. Miller, Jr.'s A Canticle for Leibowitz.):

Brian Aldiss	Harry Kuttner
Poul Anderson	Fritz Leiber
Isaac Asimov	Murray Leinster
Eric Temple Bell (John Taine)	Richard Matheson
Alfred Bester	Judith Merrill
James Blish	Sam Merwin
Nelson Bond	P. Schuyler Miller
Anthony Boucher	C. L. Moore
Ray Bradbury	Chad Oliver
Frederic Brown	Frederik Pohl
Algis Budrys	Fletcher Pratt
Arthur Clarke	Eric Frank Russell
Hal Clement	Robert Sheckley
L. Sprague DeCamp	Clifford Simak
Lester Del Rey	Curt Siodmak
Philip Dick	William Sloane
Philip José Farmer	Clark Ashton Smith
Raymond Z. Gallun	Edward E. Smith
Hugo Gernsback	George O. Smith
Horace L. Gold	Theodore Sturgeon
Edmond Hamilton	William Tenn
Robert Heinlein	Wilson Tucker
Fred Hoyle	Jack Vance
L. Ron Hubbard	A. E. Van Vogt
Malcolm Jameson	Kurt Vonnegut, Jr.
Raymond F. Jones	Donald Wandrei
O. A. Kline	Stanley G. Weinbaum
Damon Knight	Jack Williamson
C. M. Kornbluth	John Wyndham

Also generally well represented are many writers who, though they are not so easily labeled as professional science-fiction writers, have written what is either science fiction or is at least often of interest to readers of science fiction: such writers as E. R. Eddison, William Hope Hodgson, Robert E. Howard, H. P. Lovecraft, David Lindsay, A. Merritt, M. P. Shiel, S. Fowler Wright. Olaf Stapledon is represented by fifteen entries.

And, of course, the collection contains much of the science fiction or what is related to science fiction which has been written by "mainstream" writers — writers of such varying degrees of esteem and interest among critics and literary historians as Edward Bellamy, Stephen Vincent Benét, Edward Bulwer-Lytton, Samuel Butler, Taylor Caldwell, Karel Čapek, William Golding, Aldous Huxley, C. S. Lewis, Fitz-James O'Brien, George Orwell, Edgar Allan Poe, Nevil Shute, George R. Stewart, Frank Stockton, Gore Vidal, H. G. Wells, Philip Wylie, Eugene Zamiatin. The first division is also rich in famous nineteenth and twentieth-century popular fiction by Edgar Rice Burroughs, Arthur Conan Doyle, H. Rider Haggard, Sax Rohmer, Bram Stoker, and others (Doubtless very valuable are thirty-six titles in Victor Appleton's "Tom Swift" series.). Jules Verne, strangely enough, is represented by only six titles in this division plus a few more under foreign fiction.

Finally, the collection is rich in obscure works known only to those who have studied the history of this kind of fiction: e.g., works by Joseph Atterley (George Tucker), Charles Willing Beale, William Bradshaw, Robert W. Chambers, Percy Greg, George Griffith, Richard Adams Locke, Simon Newcomb, Garrett P. Serviss, S. Byron Welcome, Sydney Whiting, and hundreds more. Even so, the collection by no means has every single item of this sort that it might have: e.g., it is missing Robert Cromie's A Plunge into Space, Edward Everett Hale's The Brick Moon and Other Stories, and C. H. Hinton's Scientific Romances. And apparently there are no cosmic voyages earlier than the nineteenth century.

From science fiction, the collection, of course, shades off through what is scarcely science fiction into what is not science fiction at all. Tales of terror and the supernatural, for instance, are represented not only by such writers as Lovecraft and Howard but by others like Algernon Blackwood, Lord Dunsany, Arthur Machen. Then, too, there are many works which could as easily be catalogued in a collection of utopias and dystopias: e.g., beside the works of such writers as Zamiatin, Huxley, and Orwell, the collection contains William Morris's News from Nowhere, W. H. Hudson's A Crystal Age, as well as David Karp's One and Bernard Wolfe's Limbo. Last, there are works which must be in the collection only because they are fantasy: e.g., J. R. R. Tolkien's The Lord of the Rings and T. H. White's The Once and Future King. Some of this "pure" fantasy is also by professional science-fiction writers.

II. BIBLIOGRAPHICAL

Listed below are all the titles — except for duplicates and different editions — in this division:

1. Kingsley Amis, New Maps of Hell.
2. Dirce Archer, "Surveying British Science Fiction," Astounding Science Fiction, September, 1953.

3. J. O. Bailey, Pilgrims Through Space and Time.
4. Marie Louise Berneri, Journey Through Utopia.
5. Heinz Bingenheimer, Katalog Der Deutschsprachigen Utopisch-Phantastischen Literatur: 1460-1960.
6. Everett F. Bleiler, ed., The Checklist Of Fantastic Literature.
7. Anthony Boucher, "Science Fiction Still Leads Science Fact," New York Times Magazine, December 1, 1957.
8. Reginald Bretnor, ed., Modern Science Fiction.
9. British Science Fiction Association, New Worlds Science Fiction. A History and Checklist of New Worlds.
10. Alastair Cameron, Fantasy Classification System.
11. Joseph E. Crawford, Jr., et al, "333": A Bibliography of the Science Fantasy Novel.
12. Basil Davenport, Inquiry into Science Fiction.
13. _____, ed., The Science Fiction Novel.
14. Donald B. Day, Index to the Science Fiction Magazines: 1926-1950.
15. L. Sprague De Camp, Science Fiction Handbook.
16. Richard H. Eney, Fancyclopedia II.
17. Lloyd Arthur Eshbach, ed., Of Worlds Beyond: The Science of Science Fiction Writing.
18. Galaxy Science Fiction, "Typescript source lists for stores in:
The Treasury of Science Fiction
The Best of Science Fiction
Adventures in Time and Space
Possible Worlds of Science Fiction."
19. Richard Gerber, Utopian Fantasy.
20. Hugo Gernsback, Evolution of Modern Science Fiction.
21. _____, The Impact of Science Fiction on World Progress.
22. _____, Science Fiction vs. Reality: Address by Hugo Gernsback

23. Roger Lancelyn Green, Into Other Worlds.
24. Harvard Alumni Bulletin, Vol. 60, No. 5 (Contains "Science Fiction, Prophet and Critic").
25. Harvard Library Bulletin Vol. IX, No. 3 ("A Science Fiction Collection for Harvard").
26. Ralph M. Holland, Ghu's Lexicon. Translated from the Original Venusian Cuneiform.
27. Earl Kemp, "The Science-Fiction Book Index" in T. E. Dikty, ed., The Best Science Fiction Stories and Novels: 1955.
28. Damon Knight, In Search of Wonder.
29. Margaret Mead and Rhoda Metraux, "Image of the Scientist among High School Students," Science, August 30, 1957.
30. Walter W. Lee, Jr., Science-Fiction and Fantasy Film Checklist.
31. P. Schuyler Miller, "The Basic Science Fiction Library," Astounding Science Fiction, January, 1953.
32. _____, "Second Guessing the Poll," Astounding Science Fiction, November, 1956.
33. _____, "Verdict of You All," Astounding Science Fiction, October, 1956.
34. Patrick Moore, Science and Fiction.
35. Sam Moskowitz, The Immortal Storm: A History of Science Fiction Fandom.
36. _____, How Science Fiction Got Its Name (Reprinted from The Magazine of Fantasy and Science Fiction, February, 1957).
37. Hermann J. Muller, Science Fiction as an Escape (Reprinted from The Humanist, No. 6, 1957).
38. New York Times Magazine, November 29, 1961 (Asimov, "Fact Catches up with Fiction").
39. Vernon Louis Parrington, Jr., American Dreams: A Study of American Utopias.
40. Peter Penzoldt, The Supernatural in Fiction.
41. Photostat of clipping from New York Times, January 6, 1958, about Gernsback.

42. Frances Theresa Russell, Touring Utopia. The Realm of Constructive Humanism.
43. Martin Schwonke, Vom Staatsroman Zur Science Fiction; Eine Untersuchung Über Geschichte und Funtion Der Naturwissenshaftlich-Technischen Utopie.
44. "Science Fiction Does Not Mean Spaceship Cowboys," Harvard Crimson, November 2, 1952.
45. Speer Index to Science Fiction No. 2 with Additions and Revisions by George Pubols.
46. Startling Stories, Fall, 1955 (Article on Clarkson Collection).
47. Jacques Sternberg, Une Succursale Du Fantastique Nommée Science Fiction.
48. Testimonial to Hugo Gernsback, "Father of Science Fiction."
49. Donald H. Tuck, A Handbook of Science Fiction and Fantasy.
50. U. S. Congress (86th Congress, 1st Session), The Next Ten Years In Space.
51. _____, Space Handbook: Astronautics and its Applications.
52. _____, Survey of Space Law.
53. Utopia-Programm, Das Grosse Utopia-Programm.
54. Geoffrey Wagner, Parade of Pleasure: A Study of Popular Iconography in the USA.
55. Lauriston Ward, Bibliography of Science Fiction (Manuscript).
56. What is Science Fiction Fandom?
57. Die Zukunft Im Buch (Published by Science Fiction Club Deutschland).

III. NON-FICTION

This division (130-140 entries) appears to be devoted to what might be termed science-fiction subjects: i.e., space travel, life on other worlds, the future of the human race, flying saucers, and so forth. The following are representative titles:

1. John W. Campbell, Jr., The Atomic Story.
2. Frederick Edwin Smith, 1st Earl of Birkenhead, The World in 2030 A. D.
3. Reginald Churchill, A Short History of the Future.
4. Arthur C. Clarke, The Exploration of Space.
5. L. Sprague De Camp, Lost Continents.
6. J. W. Dunne, An Experiment in Time.
7. J. B. S. Haldane, The Last Judgment. A Scientist's Vision of the Future.
8. Gerald Heard, Is Another World Watching?
9. Kenneth Heuer, Men of Other Planets.
10. Donald Keyhoe, Flying Saucers from Outer Space.
11. Willey Ley, Rockets, Missiles, and Space Travel.
12. Margaret Mead, "Towards More Vivid Utopias" (Reprinted from Science, No. 8, 1957).
13. Donald Menzel, Flying Saucers.
14. Bertrand Russell, Icarus or the Future of Science.
15. Olaf Stapledon, Beyond the "Isms."

IV. COMICS

This division contains science-fiction comic books, for which there are twelve card entries. The following are two typical entries:

Barnaby, Vol. 1, No. 1, July, 1945.
Flash Gordon, Nos. 84 and 173.

V. ILLUSTRATIONS

Five card entries: Original drawings for covers and illustrations for science-fiction magazines. For example:

The Warriors -- an original drawing by Tom Pardon for illustration used in June, 1962 Amazing Science Fiction.

Nightmare -- trail layout for an unpublished magazine, with 12 original drawings, mounted, by D. Bruce Berry (cover in oil, others in water color).

VI. VERSE

Three entries:

Willis A. Boughton, The Far Place

Carter Lin, Sandalwood and Jade.

Frederick Winsop, The Space Child's Mother Goose.

VII COLLECTIONS

With more than two hundred entries, this division is devoted to anthologies of science-fiction stories and novels. It also contains a few anthologies of related types of fantasy, particularly tales of terror and the supernatural (i.e., Bennett Cerf, ed., Famous Ghost Stories; Montague Summers, ed., The Supernatural Omnibus; and Herbert Wise and Phyllis Fraser, eds., Great Tales of Terror and the Supernatural). The anthologies in this division differ from the few in the fiction division by the fact that these are in each case anthologies or stories of short novels by various authors, not anthologies of the work of one author.

The following list suggests the extent of the holdings in this division:

1. Everett F. Bleiler and T. E. Dikty, eds., 11 anthologies, including The Best Science Fiction Stories for each year, 1949-1954.
2. Anthony Boucher, ed., The Best from Fantasy and Science Fiction 4th - 8th series.
3. Groff Conklin, ed., 19 anthologies.

4. Edmund Crispin, ed., Best Science Fiction.
5. August Derleth, ed., 14 anthologies.
6. T. E. Dikty, ed., 5 anthologies.
7. H. L. Gold, ed., 7 anthologies.
8. Raymond J. Healy and J. Francis McComas, eds., Adventures in Time and Space.
9. Judith Merrill, ed., 10 anthologies.
10. Frederik Pohl, ed., 12 anthologies, including Star Science Fiction Stories, nos. 1 - 6.
11. Donald Wollheim, ed., 32 anthologies, including: Avon Fantasy Reader, Nos. 1-18, The Pocket Book of Science Fiction, The Portable Novels of Science.

There are many, many other anthologies, of course, including ones edited by Robert Heinlein, Fritz Leiber, Murray Leinster, Robert P. Mills, and William Sloane.

VIII. PERIODICALS

This division contains nearly complete holdings of the best-known science-fiction pulp magazines (e.g., Amazing, Astounding, Galaxy, If, The Magazine of Fantasy and Science Fiction) though occasionally there are important gaps (e.g., Amazing, Vol. XI, 1937, is represented only by issue No. 2). Holdings of the less well-known magazines range from scattered to complete. All gaps are being filled by continued acquisitions.

(It is my understanding that a "Desiderata to Complete Runs of Periodicals" is kept up to date and is available to anyone interested in donating back issues.)

The following is a complete list of the various magazines catalogued:

1. A. Merritt's Fantasy Magazine.
2. Air Wonder Stories.
3. Amazing.
4. Amazing Stories Annual.
5. Amazing Stories Quarterly.
6. Argosy.
7. The Arkham Sampler.

8. American Science Fiction Magazine (Australian).
9. Astonishing Stories.
10. Astounding.
11. Astounding (British).
12. Avon Science Fiction and Fantasy Reader.
13. Beyond Fantasy Fiction.
14. Bluebook.
15. Captain Future.
16. Captain Zero.
17. Comet Stories.
18. Cosmos Science Fiction and Fantasy Magazine.
19. Los Cuentos Fantásticos.
20. Doc Savage.
21. Dream World.
22. Dynamic Science Fiction.
23. Everyday Science and Mechanics.
24. Famous Fantastic Mysteries.
25. Fantastic.
26. Fantastic Adventures.
27. Fantastic Novels.
28. Fantastic Story Magazine.
29. Fantastic Story Quarterly.
30. Fantastic Universe Science Fiction.
31. Fantasy Book.
32. Fantasy Fiction.
33. Fantasy Magazine.
34. Fate.
35. Flying Saucers from Other Worlds.
36. Flying Saucers: The Magazine of Space Conquest.
37. Frankenstein.
38. Future Combined with Science Fiction Stories.
39. Future Fiction.
40. Future Science Fiction.
41. Future Science Fiction (Australian).
42. Futuristic Science Stories (British).
43. Galaxis Science Fiction.
44. Galaxy Science Fiction.
45. Hapna!
46. The Hidden World.
47. Humbug.
48. If: Worlds of Science Fiction.
49. Imagination: Stories of Science and Fantasy.
50. Imaginative Tales.
51. Infinity Science Fiction.
52. Mad.
53. Magazine of Fantasy and Science Fiction.
54. Marvel Science Stories.
55. Marvel Tales of Science and Fantasy.
56. Mas Alia.
57. Modern Electrics (Souvenir replica of Vol. 1, No. 1).

58. More Trash from Mad.
59. The Mysterious Traveler Magazine.
60. Mystery Book Magazine.
61. Mystic Magazine.
62. Nebula.
63. New Worlds (British).
64. New Worlds Science Fiction.
65. Orbit Science Fiction.
66. The Original Science Fiction Stories.
67. Other Worlds Science Stories.
68. Out of This World Adventures.
69. Planet Stories.
70. Popular Science Monthly (June, 1930).
71. Proceedings of the Institute for Twenty-First Century Studies (PIIFCS).
72. Radio-Electronics (April, 1958).
73. Radio News (February, March, 1926).
74. Rocket Stories.
75. Satellite Science Fiction.
76. Saturn: The Magazine of Science-Fiction.
77. Science and Invention.
78. Science Digest.
79. Science Fantasy (British).
80. Science Fiction.
81. Science Fiction Adventures.
82. Science Fiction Adventures Magazine.
83. Science Fiction Digest.
84. Science Fiction Plus.
85. Science Fiction Quarterly.
86. Science Fiction Stories.
87. The Science Fiction World.
88. Science Stories.
89. Science Wonder Quarterly.
90. Science Wonder Stories.
91. Search Magazine.
92. Selected Science Fiction Magazine.
93. Shock Suspense Stories.
94. Short Stories.
95. Space Age (November, 1958).
96. Space Journal.
97. Space Magazine.
98. Space Science Fiction.
99. Space Science Fiction Magazine.
100. Space Stories.
101. Space Travel.
102. Spaceway: Stories of the Future.
103. Star Science Fiction.
104. Startling Stories.
105. Super Science Fiction.
106. Super Science Stories.
107. Strange: The Magazine of True Mystery.

108. Supernatural Stories (British).
109. Suspense Magazine.
110. Tales of the Sea (Spring, 1953).
111. Tales of Tomorrow.
112. Tales of Wonder.
113. The Tech Engineering News (January, 1953).
114. 10 Story Fantasy.
115. Thrilling Wonder Stories.
116. Thrills Incorporated (Australian?)
117. Tomorrow.
118. Tops in Science Fiction.
119. Two Complete Science Adventure Books.
120. Universe Science Fiction.
121. Unknown Worlds.
122. Urania (Italian).
123. Utopia-Grossband.
124. Utopia Magazin.
125. Utopian Science Fiction Magazine (German).
126. Vanguard Science Fiction.
127. Venture Science Fiction.
128. Vortex Science Fiction.
129. Weird Science Illustories.
130. Weird Tales.
131. Why: The Magazine of Popular Psychology. November, 1950 .
132. Wonders of the Spaceways.
133. Wonder Stories.
134. Wonder Story Annual.
135. Wonder Story Quarterly.
136. Worlds of Fantasy.

IX. FANZINES

There are fifty-two entries in this division, with usually one or two issues of any fanzine for each entry. The largest number of issues for any entry is fourteen.

X. MANUSCRIPTS.

This division contains twenty-seven entries, all manuscripts of science-fiction short stories, none very famous. There are supposedly many manuscripts yet to be catalogued, including some of important stories by John W. Campbell, Jr.

XI. FOREIGN FICTION.

Thirty-six entries. Some are in the original language, others in translation. Included are the works of such writers as Edmund About, Ivan Efremov, J. H. Aine Rosny, and even a German translation of Whiting's Helionde. But, alas, there is nothing by Kurd Lasswitz.

Hamilton, New York

Sam Moskowitz. Explorers of the Infinite: Shapers of Science Fiction.
Cleveland and New York: The World Publishing Company, 1963. 354 pp. \$6.00.

Because attention over the past several years has been centered so much on the dystopia, Sam Moskowitz's Explorers of the Infinite gains special value by reminding us that modern science fiction is not simply a reaction against earlier utopian visions which employed science as a cure-all, but is instead a far more complex genre recognizable in its continuity from at least the early nineteenth century to the present. Indeed, one of the distinguishing features of the book is that it does not deal with either the utopia or dystopia per se. Acknowledging that no definitive history of science fiction has yet been written, he asserts that this book "does claim to present the framework of such a history through emphasis upon the contributions of major molders of the form from the beginnings of man's literature up until 1940, with but a brief look beyond." (p. 14) The earliest writers whom he treats in detail are Cyrano de Bergerac, Mary Shelley, and Edgar Allan Poe.

Certainly there is no person better qualified to write on science fiction than Sam Moskowitz. Since the 1930's he has been active in the field; he was one of those who organized The First World Science Fiction Convention in 1939 and the Eastern Science Fiction Association. Briefly in 1953 he edited Science-Fiction Plus, published by Hugo Gernsback; in 1954 he published The Immortal Storm, a history of science fiction fandom. In 1954, too, he edited one of the most distinguished anthologies in the field: Editor's Choice in Science Fiction. Since then he has written extensively about the genre in the popular magazines. Most important, as a bibliophile, he has collected what I would judge to be the foremost private collection of books, magazines, fanzines, and manuscript materials existing. (I suggest that he and the Clarkson Collection combine.) As might be expected, it is in this area of bibliography -- with an astute collector's knowledge of date of composition, variant manuscripts, and exact dates of publication (and re-publication)-- that Explorers of the Infinite has one of its areas of particular strength.

In this regard one of the most satisfying portions of the book (Chapter 7) chronicles the juvenalia of the turn of the century, those "prophetic dime novels," three-quarters of which were written by one man, Lu Senarens, who produced the Frank Reade, Jr. series. Between 1879 and 1898 he wrote more than 180 stories which perpetuated a formula that has been imitated endlessly: brilliant boy, wonderful invention, philanthropic use, if only for purposes of rescue. Its persistence and adaptation may be seen in such series intended, perhaps, for more adult audiences as Arthur Reeves' Craig Kennedy detective stories (Cosmopolitan) and Street and Smith's Doc Savage. As for Senarens, his oftentimes obvious indebtedness gained him the title "the American Jules Verne."

Perhaps the most significant contribution of the book -- simply because it is in hard covers and has a potentially wide circulation -- lies in Moskowitz's sketches of the careers of a number of the important writers of the period 1910-1940: Edgar Rice Burroughs, H. P. Lovecraft, A. Merritt, Philip Wylie, Stanley G. Weinbaum, and Olaf Stapledon. From all of these chapters because

of the comparative newness of the material, one comes away with whetted appetite and a sense of frustration; he wishes more extensive treatment had been given each man. Particularly is this true of the last chapter of the book in which Moskowitz sketches, almost tersely, the high points in the history of science fiction since 1938. The result is a veritable catalogue of authors' names, first stories, and major achievements.

Within these chapters are provocative ideas that need further development--certainly by Moskowitz, undoubtedly by others as well. Of the Tarzan books, he makes the assertion . . . "the spirit of science fiction underlies the entire series." (p. 173) He insists that the best of Lovecraft is science fiction, not fantasy, and cites Fritz Leiber, Jr. as saying in 1944 that "Lovecraft's most important single contribution was the adoption of science-fiction material to the purpose of supernatural terror." (p. 259) And, of course, there is the old assertion that Hugo Gernsback is the "Father of Science Fiction." (Chapter 14) In many ways his discussion of Olaf Stapledon is best sustained and most unified; most provocative, too, for he stresses both that philosophy served as the core of Stapledon's work (The implication is almost that with him it entered science fiction.) and that he is the source of the "Galactic empires so essential" to much of recent science fiction.

After celebrating these "shapers of science fiction," Moskowitz closes the book on a strange note which is nevertheless perhaps the key both to his judgment of individual works and to his sketch of the genre's development: By the 1950's "Suave writing had diluted most of the 'sense of wonder' in science fiction. The 'documentary', too close to the present to allow any imagination, rinsed out most of what remained." (p. 350) This assertion climaxes his ever-present demand for story, action, entertainment.

All that has been said leads to the chief flaws of Explorers of the Infinite. By far the most serious is that because much of the material has been published previously, one feels that Moskowitz has gathered together a number of articles and has not bothered very much to rewrite or reorganize the material. The frequent repetition of material in different chapters - explanation rather than allusion - and the lengthy intrusion of peripheral materials that is not necessary at that point to the central discussion if the discussion is a chapter in a book rather than an independent piece provide evidence of this. In addition, too, whereas the biographical material dealing with recent writers is a strength, the intrusive sketches of older writers - Mary Shelley, Poe, Fitz-James O'Brien, Jules Verne, Wells, Doyle - does not seem necessary per se in a book intended at least in part for a scholarly audience.

Then there are certain significant omissions, perhaps the most noticeable being Rider Haggard. He is given passing salute at best. Yet he shaped the "lost race" - "lost world" motifs more than did any other writer. Not even Edward Bellamy was imitated, parodied, in such quantity for so long. And those motifs form a central part of Burroughs or A. Merritt. Similarly, while The Battle of Dorking (1871) may have inaugurated the "future war" motif, Frank Stockton, in his Great War Syndicate (1889), crystallized its fully developed form at least through the 1920's, if not the 1930's. Nor is William Henry Rhodes' Caxton's Book (1876) mentioned, though he was also acknowledged

an American Verne who was creating a "scientific fiction." One further example may suffice. In at least six stories Ambrose Beirce gives explicit attention to the idea of racial memory as causing and governing man's fear; almost all of his stories dramatize this fear, most involving the supernatural and one, "The Damned Thing," being an excellent example of a fusion of biological phenomenon - supernatural horror - and explicit scientific, theoretical explanation. Has he not helped to shape science fiction, even perhaps the work of Lovecraft?

Two principles seem to govern Moskowitz's evaluation of individual works and his sketch of the high points in the evolution of the genre. First, there must be virtually a lineal pattern of sources and influences, all leading back to Poe and Verne. (He argues that "Ms. Found in a Bottle" is science fiction, but ignores the praise that Poe gave to Coleridge and thereby the possible relationships of Poe's crew and that of The Ancient Mariner.) No one would deny these two men their seminal influence, yet one must ask whether or not virtually everyone must simply borrow from them. Secondly, a point I have argued with Moskowitz a number of times, to just what extent is Hugo Gernsback "The Father of Science Fiction"? That he founded the first magazine devoted exclusively to science fiction, yes - but Poe, Verne, Wells, O'Brien, Stockton, Haggard, all of these men might wish at least visiting rights with the child. (And Gernsback republished much of their work in Amazing.) Critically, Moskowitz has adopted the Gernsback formula, and that leads inevitably to gadgets. One might also ask what the precise influence of 'exclusive' magazines was upon the genre, especially when hardbacks and such periodicals as All Story and Bluebook and Argosy had long published science fiction, much of it concerning "wonderful inventions". Volume I, number I of Extrapolation indicates a part of the American titles for the period 1885-1915 only. Was the influence of the magazines an inbreeding as well as a stimulant?

But these are questions to be answered by the future historians of science fiction who must see to what extent the drawing boards of the inventors and the theories of such men as Schiaparelli froze the content of science fiction of a given period, as well as to what extent the novels of prophecy determined the drawing boards. Certainly in the period to 1940 science fiction served as a tool for a romanticism which prophesied "the machine-made millenium", whether on earth, on Mars, or on a plant of far Centaurus.

Until the history is written, and even then, Sam Moskowitz's Explorers of the Infinite must remain an indispensable book to the fan/student of the genre. In scope, in provocativeness, it complements and is perhaps the equal to J. O. Bailey's Pilgrims Through Time and Space.

T. D. C.

BRAVE NEW IMPROBABLE WORLDS: CRITICAL NOTES ON 'EXTRAPOLATION'

AS A MIMETIC TECHNIQUE IN SCIENCE FICTION

V. Milo Kaufmann

Before conceding that science fiction is a genre worthy to stand beside the proven kinds, we should give careful attention to the basic problems this body of literature raises for the critic, and determine, if possible, whether the problems are peripheral and developmental, sure to be sloughed off as the genre matures, or rather are organic, the inevitable and ineradicable implications of those very features which distinguish the genre. If the latter is the case, of course, the claims of the genre for high rank are severely qualified.

My argument shall be that the defining characteristic of science fiction, namely its presentation of novel worlds, has certain problems organic to it; that despite the earnest efforts of some to distinguish science fiction from fantasy, science fiction is actually a variety of technological fantasy, the realism of its descriptive technique inadequate to save it from the sundry difficulties of improbability attendant upon that method of fashioning novel worlds which will here be designated for a number of reasons as 'extrapolation.'

Let us first make some effort to bolster the case for science fiction's interest in worlds radically different from the conventional. One of the most thorough efforts at definition of the genre was made by Kingsley Amis in his Princeton lecture-series later published as the book, New Maps of Hell. Amis leaves the reader with no doubt about the wideness and representativeness of his reading in science fiction. He defines the genre as follows:

Science fiction is that class of prose narrative treating of a situation that could not arise in the world we know, but which is hypothesized on the basis of some innovation in science or technology, or pseudo-science, or pseudo-technology, whether human or extraterrestrial in origin.

(p.18)

His point is plain. The worlds that science fiction handles are not the ones we know.

Damon Knight, another figure familiar to the science fiction readership, addresses himself briefly to the problem of definition in his introduction to the anthology, A Century of Science Fiction (1962). He is in no doubt about the discreteness of the genre:

Science fiction is distinguishable by its implicit assumption that man can change himself and his environment. This alone sets it apart from all other literary forms.

(p. 11)

The discreteness of the genre, he suggests, echoing Kingsley Amis, is the consequence of the special relationship of the world it describes to the conventional world. Science fiction's concern, like that of both the rapturous Miranda and the satiric Aldous Huxley, is with a 'brave new world.' It explores a terra incognita made plausible by all the artifice of manufactured fact. As he explains:

The delights of good science fiction are many; but always chief among them is the pleasure of watching consequences flow logically out of a boldly imaginative premise.

(p. 11)

That premise is one which catapults the action into a novel world.

If it were likely that this characteristic of science fiction was occasion for dispute, we would spend more effort documenting the judgment of Amis and Knight; but such dispute seems improbable, and the statements cited do their real service by putting before us in plain fashion the question of mimetic strategy as employed in the genre. If science fiction is concerned to present novel worlds, how does the writer implement this concern?

Let us for convenience sake borrow the pair of terms, interpolation and extrapolation, from the mathematician and so define them here as to be of use in discriminating between mimetic procedure in conventionally realistic fiction and in science fiction. Interpolation, we may say, describes that procedure in which the frame, as well as the source, for the invented action is the world as we know it; the fiction is elaborated by probably, even if contrived, detail set within that framework. This is the natural movement of mimesis, as Aristotle discusses it. The recurrences of the real world establish canons of probability which are observed by the writer in filling in hiati in the fiction. The model case of interpolation is seen, perhaps, in the historical novel, which background and gross action are borrowed from the real past world, and fine action is interpolated in a fashion consistent with that appropriated history.

Now if we are careful to distinguish the realism of plot from the realism of descriptive technique, we may say that the former is usually if not always a consequence of interpolative procedure, while the latter can with equal justification be associated with interpolation or extrapolation. The realism of science fiction, it should be noted, is ordinarily the realism of descriptive technique; that is, the realism of plausibility given by the multiplication of invented detail. And while the tendency to praise the verisimilitude of science fiction is common,

there is a confusion fostered by such commendation. For verisimilitude, likeness to the truth, depends upon both realistic detail and realistic mythos. The fact that one proper definition of verisimilar is probable suggests that thorough verisimilitude must give heed to the canons of probability. The verisimilitude rightly claimed by science fiction is partial.

Science fiction's leap beyond the conventional world can be discussed in terms of extrapolation. For the writer, as for the geometrician, the process is reliable roughly in inverse proportion to the length of the leap beyond the given. Relating this to the matter of probability, we may say that both the further the writer moves from the known and the more elaborate his manipulations of his inventions, the more perplexing becomes the relationship of his inventions to the known, and the more problematic the issues of probability. Manifestly, even an invented world cannot behave wholly capriciously. The careless writer may describe in realistic vein actions within his invented world which by some canons of probability ought never to have happened. The leading question is, of course, what are the canons of probability in a novel 'extrapolated' world, if that world is not to be judged by the regularities which order our own.

Having suggested the general nature of the problem of probability as it relates to extrapolation as a mimetic technique, let us bring our questioning to bear upon two specific matters: the probability of the behavior of non-human, invented creatures in an invented world; and the probability of the behavior of human characters in an invented world.

The brave new worlds of science fiction are populated with a marvelous variety of aliens: 'androids' and 'bug-eyed monsters,' to employ two clichés of the trade, as well as inscrutable creatures which quite escape the net of description. Let us contrast extrapolative technique, used in the creation of such an alien, with the interpolative technique used in creating, say, a Merton Densher.

Interpolative procedure, or mimesis as it is ordinarily understood, creates individuals by assembling invented particulars which conform in their peculiar ways to the classes of the shared conventional world, with the product conforming to a real class as well. Henry James creates a Merton Densher whom we have no trouble appreciating as life-like and, in a sense, one of us, since in his several qualities he both typifies various genera of the real world and is presented to us as a man. Extrapolative procedure handles genera differently, and the result is a vexing question for probability. True enough, the 'monster's' particular features may be borrowed from real classes. We recall that Bunyan's Apollyon had feet of a bear and the mouth of a lion; Homer's Polyphemus had one eye at least, and though a giant stood on two legs; H. G. Wells' Martians, despite all the author's protests about their indescribable alien horror, are compounded quite transparently from the particulars of the known world. The trouble with monsters in general is that, as a matter of fact, each kind is a novel class to itself.

Now any invention which is in an invented class to itself--outside, that is, the real classes of man, gorilla, lion, etc.--presumably is exemplary of all manner of norms and laws which are private to such classes. To put the difficulty succinctly: when we are confronted with a new class, we are helpless to predict accurately how it will behave--what, in fact, the canons of probability are for it. The invented product is not a compound subsumed by some familiar class. It is an anomaly whose configuration of characteristics may undercut all conventional canons of probability.

Is there a genuine problem here for the reader? Might not one argue that the inventor of a bug-eyed monster is free to decide precisely how that monster will behave, while it is the office of the reader quiescently to accept such deliverances? Consider the case of H. G. Wells' Martians. Is not Wells free both to decide how these malignant aliens will comport themselves and to dictate to us what is natural, probable for them?

The fact that we are so ready to concede this artistic freedom to the author is an important clue to the solution. Of course Wells is free to tell us what is probable for these creatures. But the reader has only the author's word for it; for the reader it is fide sola. The propriety, the naturalness of the monster's behavior, is perfectly provisional. It pivots upon the jewel bearing of the reader's concession to the author. We cannot bring in for collaboration those canons of probability which apply to real creatures. Indeed, that probability of behavior which rests upon the author's ipse dixit is a pseudo-probability. Genuine probability describes that situation in which the novelty confronted conforms to the expectations shaped by the observer on the basis of previous independent experience. Plainly, then, genuine probability means the author will be making concessions to the reader's expectations, rather than the reader making concessions to the author's inventiveness. And if Coleridge must ask suspended disbelief for his creation, the ancient mariner, who is in a host of ways a probable interpolation in real classes (man, mariner, sinner), what concessions in the way of faith must the inventor of the bug-eyed monster require of us? If a Mrs. Barbould could call into doubt the probability of the ancient mariner and his voyage, what must we say about the probability of those more recent creations whose periphrastics make the ancient mariner's career seem like a trip around Dr. Foster's puddle?

Let the point of our critique on this issue be plain. It is not that we cannot enjoy these extrapolated creatures. We may enjoy them immensely, suspending in large measure all reservations about how a particular monster would act if we had invented him. But I think there can be no doubt that our appreciation of an invention whose relationship to the shared human world is tentative to the extreme, whose probability is only the pseudo-probability of author's fiat--such appreciation is inferior to our appreciation of inventions which conform to real classes and real probability.

Otherwise the whole rationale of empathy and identification is to be brought into question.¹

Damon knight, we recall, suggests that science fiction assumes man can change himself and his environment. This observation serves to introduce us to the problems associated with the probability of human characters in extrapolated worlds. We may group the issues under two headings. The first heading subsumes the problems arising from the presentation of human character unchanged in an extrapolated novel world. The second subsumes the problems arising from the attempt to present human characters who are conditioned by their novel worlds.

For the most part, science fiction writers find it convenient to assume that human nature remains essentially unchanged even when the human being's world, which obviously conditions his character in countless ways, is radically different from the one we know. The reason for this assumption is evident enough. The writer has to guarantee sufficient continuity between reader and character to engage and hold the reader's interest. Difficulties arise, however, when the novel world is of a kind to insist upon concessions by the author in his portrayal of character. Even of a novel world with all its apartness and the unpredictability of a class sui generis, we are entitled to postulate that first rule of probability; namely, that the novel environment will in some way condition character. We shall develop the point at hand with special reference to Poul Anderson's "Call Me Joe" (Knight, A Century of Science Fiction, 1962).

"Call Me Joe" tells of a time some years hence when man has mastered all the intricacies of "psionics," the science of brain-and-mind, and is capable of providing invented creatures—in this case centaur-like marvels especially adapted for colonizing the surface of Jupiter—with a completely furnished brain. Implicit in the achievement is an exhaustive understanding of heredity, memory, and the nervous system. No mean accomplishment, by anyone's standards.

¹The objection may arise that, in view of the fact that monsters like Shakespeare's Caliban can grace the highest art, there is injustice in singling them out as a weakness in science fiction. But our appreciation of Caliban, in all his delightful anomalousness, is in a different category from our enjoyment of Hamlet or Cleopatra, and the difference can be analyzed in terms of probability. In the truest sense Caliban is not probable. We may affirm that a monster is an inherently inferior invention wherever we find him. There is considerable difference between finding one in a poetic romance girded by all the strengths of verse, dance, masque and wit, and in a realistic fiction where the emphasis is upon mythos, an emphasis naturally directing the reader's attention to issues of probability.

The story is a good half-hour's entertainment by one of the best raconteurs in the profession. Yet its basic weakness is apparent to anyone who reads reflectively. The characters of the story--those which are not clear stereotypes--are almost absurdly trivial for the epic situation. We are asked to accept a novel world in which nature has been so incredibly congenial as to vouchsafe man all the secrets of creating personality in his own likeness. But while the situation is one which would suggest that man is approaching to godlike stature, the characters talk and act like understudies on a second-rate off-Broadway theatrical. The conversation is petty and the relationships between characters contrived and inert. Anderson's passion for realistic detail, indeed, betrays him, for the plausibility of the sublime technology which surrounds the characters only calls attention to the triviality of those characters. We judge it incongruous to find a future technological paradise populated by men who even in the twentieth century would have to be regarded as graceless and inglorious. If we are inclined to attribute this failure more to the limitation or lapse of the author than to any weakness inherent in the genre, let it be asked what author could delineate probably characters apposite to the situation Anderson presents, a situation in kind not at all uncommon to science fiction?

The alternative approach to characterization in science fiction--and of course any particular story is apt to present a hybrid of the two-- is to describe human character modified, more or less in accord with the extrapolated world. The problem peculiar to this approach is that the reader is apt to find the character so inhuman that he instinctively invokes familiar even if irrelevant norms of evaluation, and repudiates the characterization.

C. S. Lewis, who is noteworthy for the diversity of his endeavors in literature, has given us in his science fiction trilogy--Out of the Silent Planet, Perelandra, and That Hideous Strength--a good illustration of how science fiction, so often made the vehicle of ulterior purpose, can lend itself to the presentation of Christian apologetics. In the second novel of the three, we have a model case of the problem here being considered. Ransom, the aptly named central figure, is called from earth on a secret mission to Perelandra (Venus). It so happens, in Lewis' scheme, that Perelandra is an unfallen Eden, complete with an Eve and a Tempter. Ransom's task is to counsel the Green Lady (Eve) before and during her crucial trial. Lewis' Eve is reasonably plausible, as are the ingenious stratagems of evil to which Lewis has the Tempter expose her. Like La Rochefoucauld, Lewis has a discerning eye for the fiendishly subtle appeals of selfishness, and he insures that the Green Lady is sorely beset.

Her assailant is, in one way of speaking, the crazed physicist Weston, who allows himself to be used by the Tempter in this extraterrestrial paradise. It is his character which raises the major difficulty for the reader. Without giving a full summary of the background as it is furnished in the first novel of the trilogy, we may mention that Lewis has taken that medieval angelology which Milton projected upon the Ptolemaic universe, and

read it into our Solar System. Earth is a fallen planet, under the corrupt influence of Maleldil, a depraved spirit of great power. Faced with the problem of bringing Maleldil and the Green Lady together in the Temptation, Lewis resorts to a daring manœuvre. Weston, an earthman like Ransom, has come to Perelandra to cause trouble; but he is a man, not a devil, and the plot calls for a devil; so with the novel world we are asked to accept a novel character. Before our eyes, Weston, too long evil's minion, becomes evil's embodiment, and in a rechristening that has enormous importance in the plot, Weston, now nothing more than a vehicle for Maleldil, is denominated the Unman.

Granted, in a universe where unfallen paradises still wait to be discovered, where archangels rule planets, and where discarnate evil can house itself in a human body, the Unman is no chance extrapolation. There is a consistency to his character. But Lewis does not make sufficient allowance for that stubborn habit of human readers to apply human standards even when they are irrelevant.

As the Temptation proceeds, the Green Lady's defenses become perilously eroded, and Ransom is confronted with the agonizing problem of ridding her from the tireless assaults of the Unman. Weaponless, he finally accepts his pis aller. He must meet the Unman in hand-to-hand skirmish, and, moral paragon that he is, he must pound, claw, and tear the life from his devil-filled carcass. The battle which follows is, on anyone's reckoning, a grating assault upon the nerves. The reader is requested to judge Ransom righteous and compassionate while in cold blood he struggles with his bare hands to tear the life from another once like himself. To the erstwhile Weston, the Unman, we are not to grant even a modicum of sympathy. This is no man, but a monster.

But a host of irrelevancies trouble us mightily. This Unman has the face and physique of a man, indeed of a man we became well acquainted with in Out of the Silent Planet. He has made bad mistakes in his time, but then so have all the rest of us. What, exactly, is this creature that righteous Ransom is beating to a pulp, while the nimbus of holiness plays around his brow? Plausible creature of a novel world that he is, the Unman yet reminds us too much of us men. We are sickened and horrified. We deem the Unman and his opponent too much akin to ourselves to avoid the mistake of judging them as we would judge our fellows.

In review, we may say that there seems good reason to describe the characteristic mimetic technique of science fiction as extrapolation; the method gives the partial verisimilitude of realistic detail to the basically improbable creatures and situations of novel worlds. We have noticed several of the problems inhering in such method. The non-human characters of the extrapolated world, constituting classes to themselves, undercut any notion of probability as it is ordinarily understood. The human characters that inhabit extrapolated worlds are apt either to defy probability by remaining unchanged by their novel environments or to defy the constants of human sentiment by showing changes which render them unacceptably alien.

There has always been a place for fantasy, and there seems no reason to despise the modern brand of technological fantasy which goes under the name of science fiction. Yet, those limitations which are organic to extrapolation as a mimetic technique suggest to the reflective that science fiction will never claim a place beside those genres which exalt probability, that enduring index of art's engagement with the shared human world.